

WHAT IS CLAIMED IS:

1. A multiprotocol label switching device including one or more distributed forward engines, said device comprising:

5 at least one interface module having a plurality of forward engines distributed and installed therein, each of the plurality of forward engines changing internal connection information to received internal connection information and performing a connection operation;

a controller for allocating virtual path identifiers (VPIs) between the plurality of forward engines, according to an expression: $\text{VPI number} = (\text{self forward engine number} + \text{relative forward engine number}) \% \text{total number of the forward engines}$, said controller storing and managing information on virtual path identifiers, managing internal connection information based on VPI information, and providing the plurality of forward engines with managed internal connection information; and

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15 a switch for switching a message packet between the plurality of forward engines.

2. A method for managing internal connection information in a multiprotocol label switching device with an interface module in which the forward engines for packet input/output are distributed and installed, comprising the steps of:

20 (a) allocating general switch management protocol (GSMP) information and virtual path identifiers (VPIs) between forward engines according to an expression: $\text{VPI number} = (\text{self forward engine number} + \text{relative forward engine number}) \% \text{total number of the forward engines}$;

(b) performing virtual path (VP) full mesh connections based on the allocated GSMP information and generating the VP full mesh connection information;

(c) generating and storing the internal connection information between the FEs based on the VP full mesh information when establishing connections, and transferring the internal connection information to the respective forward engines; and

(d) extracting and deleting the stored internal connection information based on the VP full mesh information when releasing connections, and transferring the internal connection information to the respective forward engines.

3. A method for managing internal connection information in a multiprotocol label switching (MPLS) device including at least one interface module, the MPLS device including a plurality of forward engines used for packet input/output, the plurality of forward engines being distributed and installed throughout said at least one interface module, said method comprising the steps of:

allocating general switch management protocol (GSMP) information and virtual path identifiers (VPIs) between said plurality of Forward Engines according to an expression: $VPI\ number = (self\ forward\ engine\ number + relative\ forward\ engine\ number) \% total\ number\ of\ the\ forward\ engines$;

performing virtual path (VP) full mesh connections between said plurality of forward engines according to the allocated GSMP information;

generating the internal connection information between the plurality of forward engines based on the VP full mesh information when establishing connections; and

extracting and deleting the stored internal connection information based on the VP full mesh information when releasing connections.

4. The method of Claim 5, wherein said step of performing further includes the step of generating the VP full mesh connection information.

5. The method of Claim 5, wherein said step of generating further includes
5 the steps of:

storing internal connection information between the plurality of forward engines based on the VP full mesh information; and

transferring the internal connection information to the plurality of forward engines.

10 6. The method of Claim 5, wherein said step of extracting further includes the step of transferring the internal connection information to the plurality of forward engines.